



**Industrial Energy Consumers of America**  
*The Voice of the Industrial Energy Consumers*

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June 14, 2013

The Honorable Ed Whitfield  
Chairman  
Subcommittee on Energy and Power  
2125 Rayburn House Office Building  
Washington, DC 20515-6115

Dear Chairman Whitfield:

Thank you for the letter of May 31, 2013 and the questions by Representative Green.

Greater use of cogeneration (CHP) or waste heat recovery (WHR) makes common sense and should be placed among the highest federal energy policy priorities because of its many benefits. CHP can produce power at an energy efficiency rate of 70 percent or better (depending upon conditions) versus conventional power generation at about 32 percent. It reduces energy consumption, reduces air emissions and GHGs, uses less water, increases the reliability of the grid, and importantly, increases the competitiveness of the manufacturing sector. Despite these benefits, regulatory barriers abound and discourage CHP project development.

Financial incentives are the most efficient way to speed the development of distributive energy projects such as cogeneration (CHP) or waste heat recovery (WHR) because they lower the cost of capital. Other words, they improve the rate of return of project. Over two decades ago, Congress provided a 10 percent investment tax credit that resulted in significant new construction of CHP projects that simultaneously increased the competitiveness of the manufacturing sector for years.

Today, the best type of federal incentive is the matching grant approach that requires the company to commit equal amounts of its own capital to the project. Given the austerity of the federal government, industry is not anticipating any type of financial incentive.

However, there is action that the federal government can take that would accelerate CHP projects. There are a large number of regulatory barrier that we believe the Federal Energy Regulatory Commission (FERC) could and should consider. We have listed several of these barriers below, providing an explanation and a potential

legislative fix that largely would be directed at FERC. We have also taken the liberty to include barriers to demand response.

## **INDUSTRIAL ENERGY EFFICIENCY/ CHP/WHR/ DEMAND RESPONSE BARRIERS**

### **POLICY DETAILS**

#### **1. Industrial Combined Heat and Power/Waste Heat Recovery (CHP/WHR) – Remove barriers to CHP/WHR investment**

- a. **Organized Markets** – FERC issues – FERC “deliverability” standards are a barrier to industrial CHP/WHR investments. The standards do not recognize the nature of the industrial CHP/WHR host manufacturer relationship. The standards do not differentiate industrial CHP/WHR from central station power (e.g., merchant power). Potential CHP/WHR facilities are often remote and will routinely consume most of the electricity produced. Transmission upgrades are imposed on industrial CHP/WHR units as if they were sited like a new central station power unit. These standards require that generators prove that their output is deliverable to the grid (load) even if that will not occur; triggering expensive, time consuming studies. The CHP/WHR generator must finance the transmission upgrade upfront. Some Regional Transmission Organization (RTO)s actually requires transmission connections as if the industrial-host load were not present. In addition to FERC interconnection rules, RTO/Independent System Operator (ISO) practices and requirements of short-term capacity payment periods, control of manufacturer CHP/WHR, and discriminatory pricing of CHP/WHR behind the meter, all work against investment in manufacturer CHP/WHR projects.<sup>1</sup>
- i. **Streamline network resource service study requirements for deliverability in interconnection.** FERC interconnection rules (deliverability standard) on “Energy Only Service” (EOS) and “Network Resource Service” (NRS) discriminate against manufacturing investment in CHP/WHR. The rules favor sales by more expensive incumbents’ with “right” to run. The standard is based on the PJM model of interconnection. Facilities that qualify as a NRS are guaranteed a substantially higher price for electric power than EOS. To get NRS status, facilities must go through an extensive three prong process and pay for transmission upgrades to show power is “deliverable” to load. NRS status allows participation in PJM’s auctions to receive a “capacity payment.” The standard provides a reduced price paid to EOS providers (which do not qualify as NRS providers). New entrant EOS providers are treated as “marginal units” capable of running simultaneously

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<sup>1</sup> <http://www.tandfonline.com/eprint/gurpUGCJdnjCtP398tFa/full>

without disturbing the NRS incumbents' "right" to run. NRS unit preference exists even if the EOS unit provides power at lower price. This standard unnecessarily limits competition and discourages industrial CHP/WHR investment. Other ISOs (e.g., NY, NE) have adopted a non-discriminatory deliverability standard<sup>2</sup> (as a variation on FERC rules) that is superior and provides any grid-connected unit (that preserves grid reliability, stability and existing transfer capacity) opportunity to compete in both capacity and energy markets. If there is not enough transmission infrastructure to deliver the output from both the new and existing units, then the units are forced to compete on basis of price to determine which unit gets dispatched.<sup>3</sup>

Legislation: FERC shall review generator interconnection standards for industrial CHP/WHR, identify RTO/ISO interconnection (including deliverability standards) practices and processes that unnecessarily limit competition and investment in industrial CHP/WHR, and should consider new rules such as adopting the NY/NE standards.

- ii. **Provide longer-term (15 to 20 year) capacity payment periods for industrial CHP/WHR in forward capacity markets.** Industrial CHP/WHR projects with power sales to RTOs are much harder to finance than sales under long-term contracts with utilities at avoided cost under PURPA. This is because power sales agreements with utilities under PURPA would typically establish a capacity payment for about a 20-year term. In RTOs, such as PJM where a separate capacity market exists, sellers can have price certainty for capacity payments on only a 3-year maximum forward basis.

Legislation: FERC shall establish longer-term capacity payments to encourage capital formation for manufacturer CHP/WHR investments e.g., a 15 to 20 year term capacity payment for manufacturer CHP/WHR facilities.

- iii. **For non-capacity resources, remove requirements of RTO/ISO control of onsite manufacturer CHP/WHR (energy services).** RTOs and ISOs often require that non-capacity interconnected generators, including onsite CHP/WHR, be under their control, even if the generator is not making sales to the market. This requirement allows an RTO to dispatch a CHP's entire power production capability to other uses based on the needs of the electrical transmission grid, irrespective of the needs of the industrial CHP/WHR's primary business. This requirement is a significant disincentive for any industrial CHP/WHR facility seeking access to the grid. The RTOs and ISOs should not mandate that CHP/WHR facilities comply with all the operational rules developed for merchant

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<sup>2</sup> The "Minimum Interconnection Standard," maximizes competitive entry to the grid.

<sup>3</sup> FERC Docket No. RM13-2-000 Small Generator Interconnection Agreements and Procedures, NOPR, January 17, 2013 ( <http://www.ferc.gov/media/news-releases/2013/2013-1/01-17-13-E-1.asp>). This NOPR recites some history of small and large generation interconnection rulemaking.

generators listed in their generic tariff provisions and mandated by execution of their operating agreements. Instead, RTO/ISO tariffs need to be flexible and allow for the refinement of contract terms to accommodate the particular needs and concerns with respect to the curtailment and dispatch of CHP/WHR.

Legislation: For non-capacity resources, the FERC shall prohibit RTO/ISOs from controlling onsite industrial CHP/WHR curtailment and dispatch. The industrial CHP/WHR facility shall have the flexibility to voluntarily commit a portion of its capacity for mandatory control by the RTO/ISO.

**iv. Mandate that behind the meter generation receive Locational Marginal Pricing (LMP) whether as sales to the RTO/ISO or as a demand response mechanism.**

Simply stated, the industrial customer (or its demand response provider) should be allowed to bid its load reduction into the RTO's day ahead or real time market. If the bid is accepted, the customer reduces its load (or turns on its generator) at the designated time, submits a settlement and gets paid LMP at settlement time. No application would be required. Behind the meter generation would be treated as Demand Response (DR). The nodal LMP would apply, nothing special need be done. At one time, NY ISO would not pay a customer for DR if the reduction in grid load was accomplished by running behind-the-meter generation. So, the customer would not be paid. This mandate would prevent this form of discrimination. The policy means that if the customer reduces its takes from the grid by running behind the meter generation, the industrial customer can be paid LMP for the reduction in grid-supplied load.<sup>4</sup>

Legislation: FERC shall order that industrial behind the meter generation shall receive LMP whether as sales to the RTO/ISO or as a demand response mechanism.

**b. States – Public Utility Commission (PUC) Issues** – In markets regulated by States, interconnection requirements also pose barriers to industrial CHP/WHR, but here standardization through high-level guidance may address the issue. For years, guidelines concerning standby, back-up and maintenance power provided under PURPA, have successfully encouraged economic deployment of smaller CHP Qualified Facilities (QF). Larger non-QFs have not had the benefit of such guidelines. Standby back-up and maintenance guidelines should be expanded to larger non-QFs. Some states have enacted discriminatory “exit fees” and “life-of-contract demand ratchets.” States have also enacted various Renewable Portfolio Standards (RPS) and Energy Efficiency Resource Standards (EERS) that discriminate against manufacturer Energy Efficiency (EE)/CHP/WHR. Guidance should be provided to States to consider costs and benefits of discrimination against industrial EE, CHP,

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<sup>4</sup> <http://www.fortnightly.com/fortnightly/2012/08/load-resource>

WHR, and DR in any RPS/EERS, exit fees, life-of-contract demand ratchets, and other discriminatory practices.<sup>5</sup>

- i. **Standardize interconnection procedures for distribution wires.** Different state requirements are numerous and unnecessarily complicated causing increased cost and process delay.<sup>6</sup>

Legislation: FERC shall study and develop relevant “guidance” on procedures, studies, reasonable hard dead-lines for completion of assessments and associated fees; states would be required to consider adopting these new rules.

- ii. **Prohibit discriminatory pricing treatment of “behind the meter” CHP/WHR.** “Behind the meter” generation refers to electricity generated onsite at a facility that is not sold to a RTO or ISO or to another wholesale entity. The RTOs and ISOs have attempted to charge industrial customers who supply their own needs with behind-the-meter generation as if they had taken their entire power supply from the RTO/ISO controlled grid. The attempted charges are for transmission, ancillary services and administrative fees based upon the total electrical consumption of an industrial facility, rather than the “net” amount actually taken from the grid. This cost allocation scheme is known as “gross load” pricing. CHP/WHR projects should not be required to pay for services on a gross load basis, but on the net actually taken off grid.

Legislation: In RTO/ISO markets, FERC shall review and prohibit gross load pricing for CHP/WHR generated electricity on site and not sold to grid or to others.

Legislation: In regulated markets, state authorities should review and prohibit gross load pricing for CHP/WHR generated electricity on site and not sold to grid or to others.

- iii. **Adopt firm standby, back-up, and maintenance power fee guidelines for non-QF CHP/WHR facilities that incent CHP/WHR investment.** Guidelines are provided under Public Utility Regulatory Policies Act (PURPA) for the design of just and reasonable utility rates for standby, back-up and maintenance power needed for CHP QF facilities. However, some public utility commissions have interpreted these PURPA provisions differently. Some approved high rates that are barriers for non-QF investment. States should expand QF standby, back-up and maintenance power rules to non-QF facilities.<sup>7</sup>

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<sup>5</sup> <http://www.tandfonline.com/eprint/gurpUGCJdnjCtP398tFa/full>

<sup>6</sup> FERC Docket No. RM13-2-000 Small Generator Interconnection Agreements and Procedures, NOPR, January 17, 2013 ( <http://www.ferc.gov/media/news-releases/2013/2013-1/01-17-13-E-1.asp>). This NOPR recites some history of small and large generation interconnection rulemakings with the point that these are models for states.

<sup>7</sup> For model standby rates see: [http://www.epa.gov/chp/documents/standby\\_rates.pdf](http://www.epa.gov/chp/documents/standby_rates.pdf).

Legislation: FERC shall develop guidance for standardization of state rules for standby, back-up and maintenance power fees that fairly represent the cost of providing those services.

- iv. **Prohibit “exit fees.”** Some states impose exit fees on industrial customers who seek to serve their power requirements from CHP/WHR facilities owned by entities other than themselves (third-party CHP/WHR). The utilities argued that recovering the stranded costs through an exit fee on those who obtain power from such CHP is justified since it protects those customers who remain on the system. Many third-party CHP facilities have not been built because the threat of an exit fee. Federal legislative language should discourage states from supporting practices, tariffs and statutes such as exit fees that are barriers to industrial CHP/WHR.

Legislation: For industrial CHP/WHR facilities, FERC shall develop “guidance” for States to encourage utilities to remove discriminatory tariff provisions such as exit fees.

- v. **Remove discriminatory “life of contract demand ratchets.”** Some utilities have life of contract demand ratchets in their tariffs for large industrial customers. These serve as a deterrent to increased installation of CHP/WHR since the industrial customer must pay for up to 75% of the demand listed in its contract (for the life of the contract) regardless of whether it takes the power or not. Such laws protect the utility’s exclusive franchise, prolong inefficiency in the generation of power, and discriminate against industrial CHP/WHR facilities. Federal legislative language should discourage states from supporting practices, tariffs and statutes such as demand ratchets that are barriers to industrial CHP/WHR.

Legislation: For industrial CHP/WHR facilities, FERC shall study and develop “guidance” for States to encourage utilities to remove discriminatory tariff provisions, such as “life of contract demand ratchets.”

- vi. **Allow full participation of industrial EE/CHP/WHR in RPSs and EERSs.** To the extent that states have an RPS that has an “energy efficiency” component – states are encouraged to allow CHP, WHR, and industrial EE to participate. Any environmental regulation/legislation should provide extra renewable energy credits (RECs) for electricity generated through CHP, regardless of generation by means of combustion, or the size of the facility. The Energy Efficiency Resources Standard (EERS) portion of any proposal whether it is included in a renewable standard or on a stand-alone basis should allow all of the output of CHP facilities to qualify for energy savings regardless of the amount of the net wholesale sales of electricity generated by the facility. A facility should not be disqualified as a

“CHP system” no matter how much electricity it sells, and all its electricity should be eligible for the CHP savings calculation.<sup>8</sup>

Legislation: FERC should study and issue guidance to States to consider costs and benefits of full participation of manufacturer EE, CHP, WHR, DR in any RPS/EERS.

- vii. Remove CHP/WHR facility barriers to sales of electricity or steam and crossing public right of way.** Some states do not allow a manufacturer or third-party CHP/WHR facility to provide electrical or thermal services by crossing streets and public right of ways. Manufacturer and third-party owned facilities may not be allowed to sell electricity and/or steam to affiliated and unaffiliated adjacent facilities whether or not streets or public right of ways must be crossed. Industrial and third-party owners of CHP/WHR generally do not have powers of eminent domain for electric service and thermal pipelines, whether served facilities are adjacent, nonadjacent, affiliated or unaffiliated.

Legislation: State authorities should allow industrial or third-party CHP/WHR facilities to provide electrical or thermal services or both, by crossing streets and public right of ways. States should consider grants of limited powers of eminent domain for owners or operators of CHP/WHR facilities to provide electricity and thermal services.

## **2. Industrial Electricity EE/DR – Remove regulatory barriers to industrial energy efficiency and demand response**

- a. Develop baseline Measurement and Verification (M&V) standards for Highly Variable and other industrial Loads (HVLs).**<sup>9</sup> Energy markets are amenable to the adoption of more consistent M&V approaches than capacity markets. FERC Order 745 has forced all of the jurisdictional wholesale markets to address common issues associated with demand response participation in wholesale energy markets. Despite the fact that each ISO/RTO has concluded that energy should be measured somewhat differently, the similarities in measurement approaches for energy are far greater than for capacity.

Common approaches in all markets exist. Yet, DR providers (industrials or their aggregators), are forced to adapt to the multiple market idiosyncrasies with complex and expensive transaction systems. The maintenance of the plethora of current DR market management preferences thwarts cost-effective operation of industrial facilities.

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<sup>8</sup> [http://www.epa.gov/chp/documents/ps\\_paper.pdf](http://www.epa.gov/chp/documents/ps_paper.pdf)

<sup>9</sup> FERC Docket No. RM05-5-020 Standards for Business Practices and Communication Protocols for Public Utilities (2012)

Each ISO/RTO has developed common, but slightly different, energy M&V rules. Manufacturers do not see how any one of these could be materially harmful to any market. The benefits of a common DR M&V rule for energy across markets would outweigh the costs.

Among the common and pragmatic DR M&V “best practices” widely adopted are the following: baseline in-day adjustment for accuracy of M&V; baseline adjustment for planned dispatch; baseline adjustment for event or economic offer days; and a mechanism to prevent stale baselines. And all markets claim accuracy approaches on which all transactions depend.

However, for industrial HVLs there is no common approach for baseline determinations. Though more suitable for commercial load purposes, none of the five existing North American Energy Standards Board (NAESB) baseline performance evaluation methods are suited to a large proportion of industrial HVLs. Industrial HVLs tend to have business-as-usual schedules that are more responsive to the forces of market conditions, rather than more predictable institutional, weather, or seasonal demand of the commercial customer. For many industrials, production and maintenance schedules change and historical meter data become irrelevant to business-as-usual consumption.

**Legislation:** FERC shall develop standardized DR M&V baselines in energy markets in RTOs/ISOs. Additionally, FERC should have a strategy to move organized markets toward responsive and responsible development of industrial HVL, DR M&V standards. Congressional oversight should encourage the FERC to move more expeditiously on standardization of M&V baselines for energy DR, including industrial HVLs.

- b. Assure organized markets give parity to DR and generation in forward capacity markets.** Further development of substantive M&V standards broadly applicable to RTOs and ISOs is needed. The status quo is unjust, unreasonable or unduly discriminatory. The lack of common DR M&V standards creates a market barrier of high magnitude and a lost opportunity for increased industrial energy efficiency, reduced emissions and avoided construction of new power generation facilities.

Generation is measured under common protocols and equipment everywhere in the world including the U.S.; demand response is not. There is little or no reason to support the status quo of balkanized market rules in DR M&V. By law, the FERC has embarked on a path to bring generation and demand response to comparable competitive treatment in wholesale markets. However, the slow pace of implementation of the law of DR M&V standards is unacceptable.

**Legislation:** FERC shall establish parity for industrial DR and generation in forward capacity markets in RTOs/ISOs. Seek congressional oversight and necessary legislation to encourage the FERC to move expeditiously on parity for capacity DR.



- c. Broaden industrial EE/DR product participation (energy, capacity, reserves, and regulation) in organized markets.** Manufacturers recognize the need for a standard approach to Energy Efficiency Measurement and Verification (“EE M&V”). Manufacturers support the efforts of the NAESB and FERC (though slow) in this area because of the growing importance of EE in organized markets. EE will be increasingly called upon because both industrial site and end-use EE are frequently identified as a low-cost solution to achieving emissions reductions in the utility sector. All forms of EE are increasingly important in making up for coal-fired base-load generation retirements caused by increasingly stringent US EPA regulations or by declining natural gas prices.

EE/DR M&V should be sufficiently rigorous to achieve an appropriate level of accuracy and not require expensive features that contribute only to unneeded precision. Also, in order for EE/DR to make maximum contributions to emissions reductions and “generation,” all FERC-approved M&V methods must be transparent.

Currently, RTO processes are overly prescriptive, resulting in M&V costs that exceed the potential benefit of industrial participation in an EE project. Those processes seem designed to achieve a high level of precision not really needed to accurately quantify energy savings. Many small projects simply are rendered too costly.<sup>10</sup>

With barrier removal, the number of viable projects would increase dramatically. More projects mean more competition in capacity markets. More manufacturing EE projects results in a more competitive industrial sector along with job creation and exports.

**Legislation:** FERC shall initiate a strategy to expeditiously develop streamlined, cost-effective application of coincidence factors for simple conversion of energy use to peak demand reduction. FERC should encourage RTOs to accept industry developed coincidence factors when evaluating EE M&V plans. Congressional oversight and authorization should encourage FERC to move expeditiously on development and

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<sup>10</sup> This problem begins with the International Performance Measurement, and Verification Protocol (IPMVP) standards which are designed for determination of reduction in energy use. IPMVP standards are not designed for determination of reduction in peak demand (i.e. capacity). The results of EE M&V determinations compliant with IPMVP and NAESB standards undertaken and applied to *energy use* for contractual purposes, are not applicable to *peak reduction* determinations. For peak reduction determinations, the EE M&V determinations must be repeated with consideration of the different goals – *at substantial cost*. One simple remedy is use of coincidence factors to convert energy use reduction to peak demand reduction. The standards allow for application of coincidence factors. *But RTOs subject the coincidence factors to extensive validation for each project despite availability of industry demonstrated values for a range of project types and conditions.* RTO acceptance of industry developed coincidence factors would remove a substantial barrier to market access by many manufacturers to provide EE for capacity purposes

application of coincidence factors for conversion of energy use to peak demand reduction.

We are grateful for Representative Green's and your interest in this subject and look forward to future discussions.

Sincerely,

Paul N. Cicio  
President

Cc: The Honorable Bobby Rush, Ranking Member

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The Industrial Energy Consumers of America is a nonpartisan association of leading manufacturing companies with \$1.3 trillion in annual sales, over 1,500 facilities nationwide, and with more than 1.7 million employees worldwide. It is an organization created to promote the interests of manufacturing companies through advocacy and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA membership represents a diverse set of industries including: chemical, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, brewing, and cement.